

AMENDMENTS TO THE CLAIMS

1 – 64 (Cancelled)

65. (New) A product comprising man-made vitreous fibres formed of a composition which includes, by weight of oxides,

SiO ₂	32 to 42%
Al ₂ O ₃	18 to 28%
CaO	10 to 30%
MgO	5 to 20%
FeO	5 to below 10%
Na ₂ O + K ₂ O	0 to 10%
TiO ₂	0.5 to 4%
SiO ₂ + Al ₂ O ₃	below 68%
Other Elements	0 to below 8%

wherein the composition has a viscosity at 1400 °C. of 12 to 70 poise,

and wherein the fibres have a dissolution rate of at least 20 nm per day when measured at a pH of 4.5.

66. (New) A product according to claim 65 in which the amount of FeO is from 5 to below 8%.

67. (New) A product according to claim 65 in which the amount of Al₂O₃ is at least 19%.

68. (New) A product according to claim 65 in which the amount of CaO is at least 18%.

69. (New) A product according to claim 65 in which the amount of SiO_2 is at least 35%.

70. (New) A product according to claim 65 in which the composition has a viscosity of 15 to 40 poise at 1400 °C.

71. (New) A product according to claim 65 in which the composition has a viscosity of 18 to 30 poise at 1400 °C.

72. (New) A product according to claim 65 in which the fibres have a sintering temperature of at least 800 °C.

73. (New) A product according to claim 65 in which the amount of SiO_2 is 34 to 42%, the amount of Al_2O_3 is 19 to 28%, the amount of CaO is 14 to 25%, the amount of MgO is 6 to 15%, the amount of FeO is 5 to 8%, and the amount of $\text{Na}_2\text{O} + \text{K}_2\text{O}$ is below 5%.

74. A product according to claim 65 in which the fibres have a dissolution rate at pH 7.5 of less than 15 nm per day.

75. (New) A product according to claim 65 in which the amount of $\text{SiO}_2 + \text{Al}_2\text{O}_3$ is 55 to 68%.

76. (New) A product according to claim 65 in which the amount of $\text{SiO}_2 + \text{Al}_2\text{O}_3$ is 61 to 68%.

77. (New) A product according to claim 65 in which the amount of Al_2O_3 is 20 to 26%.

78. (New) A product according to claim 65 in which the amount of MgO is at least 8% and the amount of FeO is from 6 to below 10%.

79. (New) A product according to claim 65 in which the composition has a liquidus temperature of 1240 to 1340 °C.

80. (New) A method of making man-made vitreous fibre product comprising selecting a mineral melt composition which has a viscosity at 1400 °C. of 10 to 70 poise at a pH in the range 4-5 and provides fibres which have a dissolution rate of at least 20 nm per day when measured at a pH of 4.5 and which includes, by weight of oxides,

SiO ₂	32 to 48%
Al ₂ O ₃	above 16 to 28%
CaO	10 to 28%
MgO	2 to 20%
FeO	2 to 15%
Na ₂ O + K ₂ O	0 to 12%
TiO ₂	0 to 4%
Other Elements	0 to 8%

and forming the man-made vitreous fibres from the selected composition.

81. (New) The method according to claim 80 in which the amount of MgO is at least 5% up to 20%, and the amount of iron, measured as FeO, is up to 10%.

82. (New) The method of claim 81 in which the amount of iron, measured as FeO, is at least 5% but below 10%.

83. (New) The method according to claim 81 in which the composition has a viscosity of at least 12 poise at 1400 °C. and the fibres have a dissolution rate at pH 7.5 below 15 nm per day.

84. (New) The method according to claim 66 in which the composition has a liquidus temperature of 1240 °C. to 1340 °C.

85. (New) The method of claim 66 in which the amount of Al₂O₃ is at least 18%.

86. (New) The method according to claim 80 in which the composition has a viscosity of 15 to 40 poise at 1400 °C. and the fibres have a sintering temperature of at least 800 °C.

87. (New) The method according to claim 80 in which Al₂O₃ is 18-30%, SiO₂ + Al₂O₃ is 60-75%, FeO is 2-12%, Na₂O+K₂O is 0-7%, TiO₂ is 0-4% and other elements is 0-8%.

88. (New) Vitreous fibres which are biologically acceptable, utilizing fibres of a composition which includes, by weight of oxides,

SiO ₂	32 to 48%
Al ₂ O ₃	above 16 to 28%
CaO	10 to 28%

MgO	2 to 20%
FeO	2 to 15%
Na ₂ O + K ₂ O	0 to 12%
TiO ₂	0 to 4%
Other Elements	0 to 8%

said composition has a viscosity at 1400 °C. of 10 to 70 poise at a pH in the range 4-5, and a dissolution rate of at least 20 nm per day when measured at a pH of 4.5.

99. (New) The fibres according to claim 88 in which the amount of MgO is at least 5% up to 20%, and the amount of iron, measured as FeO, is up to 10%.

90. (New) The fibres of claim 89 in which the amount of iron, measured as FeO, is at least 5% but below 10%.

91. (New) The fibres according to claim 88 in which the composition has a viscosity of at least 12 poise at 1400 °C. and the fibres have a dissolution rate at pH 7.5 below 15 nm per day.

92. (New) The fibres according to claim 91 in which the composition has a viscosity of 15 to 40 poise at 1400 °C. and the fibres have a sintering temperature of at least 800 °C.

93. (New) The fibres according to claim 88 in which Al₂O₃ is 18-30%, SiO₂ + Al₂O₃ is 60-75%, FeO is 2-12%, Na₂O + K₂O is 0-7%, TiO₂ is 0-4% and other elements is 0-8%.

94. (New) The fibres according to claim 88 in which the composition has a liquidus

temperature of 1240 °C. to 1340 °C.

95. (New) The fibres of claim 88 in which the amount of Al_2O_3 is at least 18%

96. (New) A product comprising man-made vitreous fibres formed of a composition which includes, by weight of oxides,

SiO_2	32 to 42%
Al_2O_3	18 to 28%
CaO	10 to 30%
MgO	2 to 20%
FeO	2 to 15%
$\text{Na}_2\text{O} + \text{K}_2\text{O}$	0 to 10%
TiO_2	0.5 to 6%
Other Elements	0 to 15%

and the composition has a viscosity at 1400 °C. of 10 to 70 poise,

and the fibres have a dissolution rate determined from the silica concentration in solution one day and four days after shaking the fibres in Gambles solution at pH 4.5 of at least 20 nm per day.

97. (New) A product according to claim 96 in which the amount of Al_2O_3 is at least 20.0%.

98 (New) A method of making man-made vitreous fibre products comprising selecting a composition in the form of a mineral melt and forming fibres from the melt wherein

a melt viscosity and a fibre dissolution rate in the presence of macrophages are determined for the composition and

a composition is selected which has a viscosity at 1400 °C. of 10 to 70 poise and which provides fibres which have a dissolution rate determined from the silica concentration in solution one day and four days after shaking the fibres in Gambles solution at pH 4.5 of at least 20 nm per day, and which includes, by weight of oxides,

SiO ₂	32 to 48%
Al ₂ O ₃	above 16 to 28%
CaO	10 to 30%
MgO	2 to 20%
FeO	2 to 15%
Na ₂ O + K ₂ O	0 to 12%
TiO ₂	0 to 6%
Other Elements	0 to 15%

and vitreous fibres are made from the selected composition.

99. (New) A method according to claim 98 in which the amount of Al₂O₃ is 12 to 28%.

100. (New) A method according to claim 98 in which the amount of Al₂O₃ is 18 to 26%.

101. (New) A method according to claim 98 in which the amount of FeO is 5 to 10%.

102. (New) A method according to claim 98 which the amount of TiO₂ is 0.5 to 4%.

103. (New) A method according to claim 98 which the combined amount of SiO₂ and Al₂O₃ is 56 to 68%.

104. (New) A package containing a man-made vitreous fibre product wherein the fibres are formed of a composition having an analysis, as oxides, which includes

SiO ₂	32 to 48%
Al ₂ O ₃	above 16 to 28%
CaO	10 to 30%
MgO	2 to 20%
FeO	2 to 15%
Na ₂ O + K ₂ O	0 to 12%
TiO ₂	0 to 6%
Other Elements	0 to 15%

and the composition has a viscosity at 1400 °C. of 10 to 70 poise,
and the fibres have a dissolution rate determined from the silica concentration in solution one day and four days after shaking the fibres in Gambles solution at pH 4.5 at least 20 nm per day,
and the package includes a label or insert referring to solubility at pH 4 to 5 and/or in environment created by macrophages in lung fluid.

105. (New) A package according to claim 104 in which the amount of Al₂O₃ is 12 to 28%.

106. (New) A package according to claim 104 in which the amount of Al₂O₃ is 18 to 26%.

107. (New) A package according to claim 104 in which the amount of FeO is 5 to 10%.

108. (New) A package according to claim 104 which the amount of TiO₂ is 0.5 to 4%.

109. (New) A package according to claim 104 which the combined amount of SiO_2 and Al_2O_3 is 56 to 68%.

110. (New) A product comprising man-made vitreous fibres formed of a composition having an analysis, as oxides, which includes

SiO_2	32 to 48%
Al_2O_3	above 16 to 28%
CaO	10 to 30%
MgO	2 to 20%
FeO	2 to 15%
$\text{Na}_2\text{O} + \text{K}_2\text{O}$	6 to 12%
TiO_2	0 to 6%
Other Elements	0 to 15%

and the composition has a viscosity at 1400 °C. of 10 to 70 poise,

and the fibres have a dissolution rate determined from the silica concentration in solution one day and four days after shaking the fibres in Gambles solution at pH 4.5 of at least 20 nm per day.

111. (New) Vitreous fibres which are biologically acceptable utilizing fibers of a composition which includes, by weight of oxides,

SiO_2	32 to 48%
Al_2O_3	12 to 30%
CaO	10 to 28%
MgO	2 to 20%
FeO	2 to 15%
$\text{Na}_2\text{O} + \text{K}_2$	0 to 12%

TiO₂ 0 to 4%

Other Elements 0 to 8%

which has a viscosity at 1400 °C. of 10 to 70 poise and which provides fibres which have a dissolution rate determined from the silica concentration in solution one day and four days after shaking the fibres in Gambles solution at pH 4.5 of at least 20 nm per day.

112. (New) Vitreous fibres according to claim 111 in the form of a bonded MMVF batt suitable for use as external roof or wall cladding or as pipe sections.

113. (New) Vitreous fibres according to claim 111 which the amount of Al₂O₃ is 12 to 28%.

114. (New) Vitreous fibres according to claim 113 in which the amount of Al₂O₃ is 18 to 26%.

115. (New) Vitreous fibres according to claim 111 in which the amount of FeO is 5 to 10%.

116. (New) Vitreous fibres according to claim 111 which the amount of TiO₂ is 0.5 to 4%.

117. (New) Vitreous fibres according to claim 111 in which the combined amount of SiO₂ and Al₂O₃ is 56 to 68%.